

## ABSTRACT OF THE INVENTION

A light-emitting semiconductor device is made of a first reflection film, an active layer, a second reflection film, an electric current spreading layer, a contact layer, and a high resistance region in order. The first reflection film reflects light with a wavelength  $\lambda$ . The active layer is injected with electric current to emit light with a wavelength of about  $\lambda$ . The second reflection film reflects the light with the wavelength  $\lambda$ . The second reflection film has a periodical structure alternately stacked with a first semiconductor layer and a second semiconductor layer. A reflectivity with respect to the light with the wavelength  $\lambda$  of the second reflection film is lower than that of said first reflection film. The electric current spreading layer transmits the light with the wavelength  $\lambda$ . The electric current spreading layer is the same electronic conduction type as the second reflection film and has not less than half of a thickness of the second reflection film. The contact layer formed is the same electronic conduction type as the second reflection film. The high resistance region is formed in a part of the second reflection film. The light-emitting semiconductor device is capable of operating at a speed of not less than 500 Mbps.